FAIRFAX COUNTY STORMWATER NEEDS ASSESSMENT PROJECT PHASE II OF THE WATERSHED COMMUNITY NEEDS ASSESSMENT AND FUNDING OPTIONS STUDY

I. Call for Change

Since the establishment of the Stormwater Management business area as part of the reorganization of the Department of Public Works and Environmental Services (DPWES) in FY 2000, new emphasis has been placed on environmental stewardship within the stormwater management areas. This new emphasis has resulted in new programs that consolidated key functions and resulted in implementation of master plan efforts, development of a comprehensive Watershed Management approach, improved business practices in the areas of inspections, citizen complaint response, public outreach, stream monitoring, and regulatory compliance, and increasing partnerships with regional and state agencies to better identify and implement storm drainage improvement projects. This has placed the County in a better position to understand the challenges that are still to be addressed. There is much to do to bring about the needed transformation from a program that can be characterized as "reactive" and "limited" to one that is effectively managing major infrastructure, responsive and comprehensive, anticipating needs and efficiently implementing environmental controls.

The County population grew by over 18% between 1990 and 2000 and is projected to grow at a similar rate between 2000 and 2010. Along with this growth comes new housing units, new roads, new commercial and employment centers, and new infrastructure, increasing impervious area and increasing the need for stormwater management services. At the same time, new or revised regulatory goals are being set in the areas of water quality protection (Chesapeake Bay 2000, TMDL program, and NPDES MS4), infrastructure management (VPDES and GASB 34), dam safety (PL-566) and public involvement (VPDES and Chesapeake Bay 2000). A summary of the recently established strategy for the Potomac River Tributaries can be found in Appendix A of this report. In addition, at the request of the citizen Stormwater Advisory Committee, a summary of mandates challenging the County for stormwater management was prepared and can be found in the Committee Report section.

Add to this that much of the existing infrastructure is approaching the end of its useful life, and it becomes obvious that to accomplish the goals of the stormwater management to protect the environment and provide a sustainable quality of life for all citizens of the County, a more robust program of service to the community is needed.

The estimated cost of implementation of the known capital construction projects is $350 million (in 1997 dollars). With the completion of the updates of watershed management plans, it is anticipated that the CIP will grow to $800 million. At the current rate of reinvestment, it will take 250 years to implement the capital construction projects and Best Management Strategies identified in these plans.

In summary, the key issues facing the County are:

- Regulatory mandates to protect the stream health and overall environment in the County.
- Regulatory programs to address protection of the Potomac River and Chesapeake Bay.
- Aging infrastructure reaching the end of its useful life, resulting in more system failures and a need for an infrastructure replacement program.
- Growing backlog of Capital Improvements, estimated to be between $500 and $800 million.

II. Level of Service

A critical component to understand the overall needs of the County is the level of service that is required to address the critical issues facing Fairfax. The program drives the policy regarding funding, private investment, developer regulations, and maintenance methodologies. To evaluate the cost of service for changes in current activities and initiation of new program elements, the level of service (or the quantity, mix and phasing of program elements) must be established to address priorities or goals of the program.

Over the past six months, the County and the Consultant Team have worked with a citizen Stormwater Advisory Committee to prioritize the program initiatives that will address the challenges in watershed plan implementation, long-term system operation, regulatory compliance, and program management. The following program categories (program matrix) were used to define the effort necessary to shift the program to a more comprehensive approach in management of the drainage system and in environmental protection.

Engineering and Design

- Design Criteria, Standards and Guidance
- Design, Field and Operations Engineering
- Maintenance and Field Engineering Support
- Hazard Mitigation Planning
- Dam Safety Program
- Retrofiting Program
- Flood Insurance Program
- Community Rating System
- Code Development and Zoning Support Services
- GIS, Mapping and Database Management
- Public Education/Outreach
- Infrastructure Management Planning

Operations and Maintenance

- General Maintenance Management
- Stormwater Management Facilities Maintenance
- Conveyance System Maintenance
- General Remedial Maintenance
- Emergency Response Maintenance

- Infrastructure Management Program
- GASB 34
- Field Data Collection
- Public Drainage System Inspection/ Regulation
- Private Facilities Inspection and Regulation
- Public Assistance and Complaint Response

Plan Review and Erosion Control

- General Code Development and Review
- Stormwater Systems Inspection -New Development
- Regulatory Enforcement
- General Permit Administration
- Erosion and Sediment Control Program

Capital Construction

- New System and Stormwater Facility Upgrade Capital Improvements
- Construction Project Management
- Inspections
- Conveyance System Rehabilitation
- Contracted Survey Services
- Land, Easement, and ROW Acquisition

Watershed Management Planning and MS4 Permit Compliance

- Watershed Planning
- BMP Development
- Comprehensive Monitoring Program
- Stream Protection and Restoration
- BMP Programs and Activities
- Used Oil and Toxic Materials
- Spill Response and Clean Up
- Program for Public Education and Reporting
- Illicit or Cross Connections
- Illegal Dumping
- Multi-objective Planning and Support
- Zoning Support
- Landfills and Other Waste Facilities
- Emergency Response

General Expenses

- General Stormwater Program Administration
- HR Functions
- General Program Planning and Development
- Budget and Cost Controls
- Contract Management
- Interagency Cooperative Activities
- Emergency/Disaster Management

II-A. Current Services

The current resources for staff, operations and maintenance, capital construction, watershed planning, general expenses and regulatory compliance, using the FY 2005 budget, were assigned to address the functions identified above. For example, existing staff positions assigned to this program were reviewed to determine gaps in resources necessary to meet program objectives for the long-term. The process involved assigning available time in increments of one percent to the needs as defined using the program matrix. As this is an evaluation of resource demand and NOT a budget, the financial analysis is based on the position class within the County personnel classification system, set at a mid-range and fully burdened. This allows for the evaluation of the time demands and the total cost to the County for the services addressed by each staff position. The following represents a sample of the position review.

Fairfax County Stormwater Program							Annual Inflation Rate
Stormwater Cost of Service Analysis/Rate Model							
Cost of Service Analysis: Personnel Allocation (by title, costs fully-burdened)							
Year 1							
Major Cost Category	SWP Director S-34		Branch Chief - Planning (S 31)		Branch Chief - Projects (S-31)		
Cost Subcategory		$ 118,826.46		$ 106,483.79		$ 106,483.79	
Administration							
General Stormwater Program Administration	0.15	$ 17,823.97	0.10	$ 10,648.38	0.10	$ 10,648.38	
Billing Operations		$ -		$ -		$ -	
Legal Support Services		$ -		$ -		$ -	
HR Functions	0.05	$ 5,941.32	0.05	$ 5,324.19	0.05	$ 5,324.19	
General Program Planning and Development	0.05	$ 5,941.32	0.05	$ 5,324.19	0.05	$ 5,324.19	
Budget and Cost Controls	0.10	$ 11,882.65	0.05	$ 5,324.19	0.05	$ 5,324.19	
Contract Management		$ -		$ -		$ -	
Public Education/Outreach		$ -		$ -		$ -	
Interagency Cooperative Activities	0.05	$ 5,941.32	0.03	$ 3,194.51	0.03	$ 3,194.51	
GIS, Mapping and Database Management		$ -		$ -		$ -	
Indirect Cost Allocations		$ -		$ -		$ -	
Unspecified Overhead		$ -		$ -		$ -	
Cost and Rate Analysis		$ -		$ -		$ -	
Emergency/disaster Management	0.02	$ 2,376.53		$ -		$ -	
Subtotal:	0.42	$ 49,907.11	0.28	$ 29,815.46	0.28	$ 29,815.46	
Engineering and Design							
Design Criteria, Standards and Guidance	0.05	$ 5,941.32	0.03	$ 3,194.51	0.10	$ 10,648.38	
Design, Field and Operations Engineering		$ -		$ -	0.05	$ 5,324.19	
Maintenance and Field Engineering Support		$ -		$ -		$ -	
Hazard Mitigation Planning		$ -	0.03	$ 3,194.51		$ -	
Dam Safety Program	0.02	$ 2,376.53	0.02	$ 2,129.68		$ -	
Retrofiting Program		$ -		$ -		$ -	
Flood Insurance Program		$ -	0.01	$ 1,064.84		$ -	
Community Rating System		$ -	0.01	$ 1,064.84		$ -	
Code Development and Zoning Support Services	0.05	$ 5,941.32	0.02	$ 2,129.68		$ -	
Infrastructure Management Planning	0.05	$ 5,941.32	0.02	$ 2,129.68		$ -	
Subtotal:	0.17	$ 20,200.50	0.14	$ 14,907.73	0.15	$ 15,972.57	

In addition, existing direct costs such as equipment, supplies and capital contracts were also allocated using the program matrix, evaluating how these resources meet the program goals; NOT how they are currently budgeted but how they can be used to meet the defined needs of the County. This process identifies the gaps in resources needed to address all program goals and objectives. The projection of new resources is based on using the existing resources as effectively as possible to address long-term priorities.

II-B. Proposed Level of Service

Development of the recommended level of service was completed by using input from the Stormwater Advisory Committee and staff and by identifying program components needed to address them. The next step compared the existing resources available and

defined new resources necessary to fill gaps in service capability. The new plus existing resources define the total service resources needed to accomplish the program goals.

The major priorities to be accomplished in the recommended level of service include the following, by program area:

Engineering and Design

1. Expand the floodplain management program including management of the dams operated and maintained by the County to meet all regulatory requirements. This is a critical initiative to ensure that floodplains are protected and that the County's liability for the management of dams, including State regulated dams is minimized.
2. Maintain the stream physical assessment program, including databases and GIS tools, and continue on-going analysis. This program is important in the process of Watershed Planning and will be used to evaluate the success of various projects/Best Management Practices implemented from the Watershed Plans.
3. Expand existing efforts in public education, including establishing a permanent full-time position for stormwater communications, program-wide, not just focused on planning but on all areas of stormwater management (maintenance, regulatory and permit compliance, Best Management Practice (BMP) implementation, volunteerism, etc.).
4. Design and implement projects identified in Watershed Plans; projects to address major system retrofits; dam improvements; and other projects established in the Capital Improvement Program.
5. Increase support for construction management and land acquisition activities necessary to respond to an increase in capital construction, ensuring that projects will be implemented in a timely manner. All areas of construction management must be addressed to ensure that projects will not be delayed due to limited capability in easement and property acquisition as well as construction oversight and inspection.

Operations and Maintenance

1. Complete an assessment of the existing drainage system, including the interconnections with privately owned facilities. This includes the inventory and assessment of those private facilities to evaluate the role of the County in their on-going operations and maintenance. Future goals of the program may include County maintenance of privately owned facilities.
2. Enhance the level of service for facilities maintenance through a growth in the mowing program, both in-house capabilities and through contracted services.
3. Create an easement inventory for access to the stormwater drainage system and identify deficiencies. This will improve the efficiency of maintenance of the overall system and is important in the evaluation of County maintenance policy regarding privately owned facilities.
4. Implement programs to address compliance under the MS4 permit. These programs include sweeping of County-owned properties (driveways and parking), contracted inspection of hazardous material storage facilities, and signing watersheds for public education.

5. Inspect privately owned facilities to determine current conditions and functionality, utilizing contracted services. This will be used to assist owners through guidance on steps necessary to maintain and sustain performance.
6. Enhance maintenance capability for the closed, underground system by utilizing technology for inspection of the system. This will provide data necessary to prioritize investment in system rehabilitation as well as provide on-going data for update of the system inventory.
7. Enhance response time for addressing routine maintenance and customer assistance, shifting the maintenance services from a reactive, high priority-only service to a program that will address routine as well as high hazard conditions within the drainage system.

Regulatory Assistance, Inspection and Plan Review

1. Provide technical assistance to private owners of stormwater facilities. As a first step in achieving, at a minimum, the original design performance for the facility, the County will provide guidance on maintenance techniques and processes, including education on responsibility of the owner for the system.
2. Increase the County's inspection capability for construction oversight as the County adopts new standards for facility design to incorporate Low Impact Development (LID) practices. Ensuring that the LIDs are constructed and maintained to effectively contribute to improved water quality is critical. A key role for this activity is to educate, both the contractor community and the owners of the LIDs.
3. Increase the resources for Plans Review to address the change in workload due to LID impacts in development standards and to increase the efficiency of current resources, giving a high level of service to the development community.
4. Increase the resources in the Maintenance and Stormwater Management Division (MSMD) for inspection of the drainage system, improving the level of service from the current ability to inspect portions of the system once every five years to once every three years. This is critical for maintenance oversight of the LID facilities to ensure that they are functioning as designed.

General Administration

1. Address coordination of the overall program of services for stormwater management by creation of a Director of Stormwater who will be responsible for the oversight of the two Divisions and for interdivisional coordination of the full program of services. Coordinated leadership is critical as the program of services expand over time. This position should report to the Public Works Director and provide overall vision and direction for the program.
2. Increase accountability for resources and for contracting activities in both Divisions for effective delivery of services. Increased effectiveness of the technical and professional staff of the Divisions can be achieved by consolidating management functions for budgeting, contracting, purchasing, administrative support, and systems operation (data management). This requires both reorganization of the current staff and increases in staff to address account

management, program and systems assessment, increased contracting activities and routine administrative support.

3. Provide sufficient resources to the Department of Tax Administration to support their role in billing and collecting user-fees. The stormwater program will purchase assistance from the DTA and should pay its "fair share" of the burden for this Department in billing, collecting, and accounting for the stormwater fees.
4. Contribute sufficient resources to the County's General Fund as compensation for utilization of general overhead services such as Human Resources, Management and Budget, County Attorney, County Executive, and Facilities Management. Often organizations utilize an indirect cost allocation for enterprise operations to support the cost to the General Fund for these important services in support of the program. The County needs to determine whether the stormwater utility will be responsible for this charge. It is currently calculated on the basis of 15.61% of the salary budget for the program. This can be as much as $11.5 million dollars over the first five years of the utility financing.

II-C. Performance Objectives – Level of Service

The following major program area performance objectives were used to evaluate the resources necessary to accomplish the priorities of the stormwater program.

- Bring all dams that are owned or operated by the County into full regulatory compliance within 24 months, addressing high-risk sites first. Maintain the integrity of the structures routinely, investing as necessary to rehabilitate dams.

- Maintain all necessary data in support of the floodplain management program and partner with FEMA to update the County floodplain maps within the first 36 months of the expanded program. Evaluate the Community Rating System program and determine an appropriate role for the County in support of this effort and implement strategies as needed.

- Provide annual, on-going support to the County Geographic Information System staff to bring the data layers that are important to the stormwater program up to date and to keep them current. This includes the update of the planimetric data on imperviousness as well as other databases on the drainage infrastructure, floodplains, stormwater management facilities, etc.

- Establish a full-time dedicated position for public education on all elements of the stormwater program and services provided by the County. Expand the public education program to reach all citizens and businesses over the next five years, addressing cultural and language issues as necessary.

- Initiate the update of all Watershed Plans no later than July 2007 with the goal of completion by July 2008.

- Initiate changes in the level of service for the operations and maintenance of the County owned or operated drainage system components, to move from a "high-risk only" response capability to resolving all requests for service within 12

months of receipt; requests from the community, service needs identified by routine inspection, and emergency service issues. This may result in projects shifting to the capital improvement program at which time they would be prioritized within the overall CIP program. It is anticipated that this level of service could be achieved within the first five years of the expanded program.

- Sustain the investment in the CIP at no less than 40% of the overall stormwater program budget over the next 20 years.

- Initiate and/or maintain a program of services that will meet the requirements of the MS4 permit on an annual basis. This includes a review of the permit in FY 2006 to position the County for the renegotiation of this permit in the first quarter of FY 2007.

- Incorporate Low Impact Development strategies, after evaluation of specific LIDs, into the PFM, beginning in FY 2006 and as technology changes; and maintain an assessment protocol to determine functionality, long-term maintenance requirements, education initiatives and needed improvements. This includes inspection and testing of the LID practices over time to ensure that the County can evaluate their performance and identify changes needed.

- Complete an assessment of the existing drainage infrastructure under County ownership and/or operation, including the underground system by FY 2010 and evaluate the impact of County operation of all stormwater management facilities, including LID practices.

III. Cost of Service

The level of service defined by the objectives identified above is translated into a projection of resources necessary to achieve these outcomes or initiate the steps necessary to achieve these outcomes over time. A number of assumptions have been made in order to define the cost of these services. In addition, several financial parameters and standards were used based on input from the Department of Management and Budget.

Assumptions and Financial Parameters:

1. Current staff resources are valued by the classification of the position and not on the basis of the salaries of the individuals holding the position today. This is done in recognition that turnover will occur and this is done to protect the confidential nature of this data. Personal services are set at mid-range for the grade assigned to the duties.
2. Personnel resources are escalated at a rate of 3.7% based on data from DMB.
3. Personnel resources are fully burdened to account for the supporting costs that address insurance, payroll taxes, retirement, etc.
4. If a change in program or level of service is not anticipated, and a program is maintained constant over the planning period, the cost of service is escalated three (3) percent annually to account for normal increases in cost of operation.

5. To determine the level of expenditure necessary to carry out new program initiatives such as construction inspection, capital project design, reduced response time to address maintenance requests, and increased watershed planning efforts, service costs are based on the use of internal staff to accomplish its goals. This is NOT a recommendation but a method to place a value the cost of service. Increases in personnel staffing is a policy decision of the Board and should be addressed in the normal annual budget process. Many services can be out-sourced and public-private partnerships can be very effective in instituting a change in level of service.
6. Resources address total County needs, not just the needs of the Stormwater Planning Division or the Maintenance and Stormwater Management Division. Needs for right-of-way acquisition, construction inspection, and billing management are included regardless of organizational assignment of the responsibility.
7. The program enhancements will be initiated in Fiscal Year 2006.
8. Cost assumptions:
    - Computers are on a three-year replacement schedule.
    - Heavy equipment will be amortized on a 10 year replacement schedule.
    - Cost for supplies, training, safety equipment, telephones, etc. are projected on the basis of $3,000 per employee, based on average expenditures in the past.

IV. Cost Projections

The following costs are presented by functional area for the six year planning period. Costs include both new initiatives and existing resources. This is NOT a budget but an evaluation of the resource demand projected to achieve the service level objectives.

The total summary of the cost of service is presented in two tables, with Table 1 representing the category of cost based on typical types of expenditures:

Personnel
Supplies
Services
Capital Expenditures

These categories represent the nature or the type of resource. Again, it is important to recognize that "personnel" does not define whether these are staff resources or contracted resources.

The second cost summary (Table 2) represents the cost of service by program functions identified above. This summary includes all new program elements and current budgeted resources.

Table 3 presents the Cost of Service summary, by program function, for the new initiatives only. It provides an overview of the six year plan. Resources are projected on a "building block" approach, recognizing that the County services will grow in a logical and orderly process. Everything cannot be accomplished in one year and adjusting to an expanded program is a challenge for existing staff. New procedures and tools

including public/private partnerships will be necessary. Building a strong program will require reevaluation of the plan on a routine basis including the testing of assumptions upon which this initial cost model was built.

Table 1 - Cost of Service by Type of Expenditure

Fairfax County Stormwater Program						
Stormwater Cost of Service Analysis/Rate Model						
Cost of Service Analysis Summary						
Consolidated Costs by Category						
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Personnel	$ 9,146,648	$ 11,416,397	$ 13,038,231	$ 15,385,544	$ 16,586,991	$ 17,200,710
Supplies	$ 2,515,245	$ 2,747,292	$ 2,688,394	$ 3,806,517	$ 3,446,424	$ 3,265,975
Services	$ 5,681,141	$ 6,532,367	$ 7,088,826	$ 7,621,649	$ 8,090,576	$ 7,622,889
Capital Expenditures	$ 14,858,000	$ 15,470,000	$ 18,070,000	$ 18,650,000	$ 18,650,000	$ 23,650,000
Total	$ 32,201,034	$ 36,166,056	$ 40,885,451	$ 45,463,710	$ 46,773,991	$ 51,739,574
Costs by Function						
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
General Expenses						
Personnel	$ 849,668	$ 791,716	$ 821,010	$ 883,151	$ 915,828	$ 949,714
Supplies	$ 422,120	$ 433,120	$ 425,120	$ 433,120	$ 427,120	$ 408,120
Services	$ 258,175	$ 2,040,275	$ 2,293,443	$ 2,822,858	$ 2,823,404	$ 2,919,206
Capital Expenditures						
Subtotal	$ 1,529,963	$ 3,265,111	$ 3,539,573	$ 4,139,130	$ 4,166,352	$ 4,277,039
Engineering and Design						
Personnel	$ 690,369	$ 832,923	$ 1,187,674	$ 1,266,870	$ 1,395,364	$ 1,446,992
Supplies	$ -	$ -	$ 19,440	$ 3,600	$ 19,560	$ 13,500
Services	$ 2,688,000	$ 1,638,000	$ 1,560,960	$ 1,500,400	$ 1,511,040	$ 1,507,000
Capital Expenditures		$ -	$ -	$ -	$ -	$ -
Subtotal	$ 3,378,369	$ 2,470,923	$ 2,768,074	$ 2,770,870	$ 2,925,964	$ 2,967,492
Operations and Maintenance						
Personnel	$ 4,907,403	$ 5,999,495	$ 6,594,218	$ 7,941,866	$ 8,432,555	$ 8,744,559
Supplies	$ 1,853,825	$ 1,954,786	$ 1,960,659	$ 2,949,611	$ 2,645,594	$ 2,531,855
Services	$ 850,000	$ 810,000	$ 810,000	$ 860,000	$ 860,000	$ 260,000
Capital Expenditures	$ 1,600,000	$ 3,000,000	$ 5,000,000	$ 7,500,000	$ 7,500,000	$ 10,000,000
Subtotal	$ 9,211,229	$ 11,764,281	$ 14,364,877	$ 19,251,477	$ 19,438,149	$ 21,536,414
Plan Review and Erosion Control						
Personnel	$ 194,717	$ 415,353	$ 492,139	$ 635,639	$ 779,541	$ 808,384
Supplies	$ -	$ 151,886	$ 61,575	$ 182,386	$ 137,650	$ 93,500
Services	$ 1,203,416	$ 1,246,093	$ 1,290,348	$ 1,336,241	$ 1,383,832	$ 1,433,184
Capital Expenditures		$ -	$ -	$ -	$ -	
Subtotal	$ 1,398,133	$ 1,813,331	$ 1,844,062	$ 2,154,266	$ 2,301,023	$ 2,335,067
Construction Services						
Personnel	$ 894,904	$ 1,752,331	$ 2,199,370	$ 2,784,576	$ 3,120,945	$ 3,236,420
Supplies						
Services	$ 356,550	$ 648,000	$ 984,075	$ 952,150	$ 1,362,300	$ 1,403,500
Capital Expenditures	$ 8,958,000	$ 9,170,000	$ 13,070,000	$ 11,150,000	$ 11,150,000	$ 13,650,000
Subtotal	$ 10,209,454	$ 11,570,331	$ 16,253,445	$ 14,886,726	$ 15,633,245	$ 18,289,920
Watershed Management Planning						
Personnel	$ 1,609,587	$ 1,624,579	$ 1,743,820	$ 1,873,441	$ 1,942,759	$ 2,014,641
Supplies	$ 239,300	$ 207,500	$ 221,600	$ 237,800	$ 216,500	$ 219,000
Services	$ 325,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 100,000
Capital Expenditures	$ 4,300,000	$ 3,300,000		$ -	$ -	$ -
Subtotal	$ 6,473,887	$ 5,282,079	$ 2,115,420	$ 2,261,241	$ 2,309,259	$ 2,333,641

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Table 2 - Cost of Service by Program Function

Fairfax County Stormwater Program

Stormwater Cost of Service Analysis/Rate Model

Cost of Service Analysis: All Costs, Summary by Cost Subcategory by Year

Major Cost Category	2006	2007	2008	2009	2010	2011
Cost Subcategory						
General Expenses						
General Stormwater Program Administration	$ 540,801	$ 567,864	$ 567,069	$ 582,542	$ 584,290	$ 573,325
Billing Operations	$ 146,879	$ 194,439	$ 197,933	$ 212,144	$ 216,294	$ 220,597
HR Functions	$ 124,280	$ 125,034	$ 128,772	$ 120,649	$ 112,669	$ 116,838
General Program Planning and Development	$ 134,367	$ 98,332	$ 101,970	$ 116,331	$ 120,635	$ 125,099
Budget and Cost Controls	$ 298,909	$ 209,361	$ 212,143	$ 225,616	$ 228,999	$ 232,507
Contract Management	$ 209,270	$ 212,525	$ 220,389	$ 228,543	$ 236,999	$ 245,768
Interagency Cooperative Activities						
Indirect Cost Allocations	$ -	$ 1,782,100	$ 2,035,268	$ 2,401,683	$ 2,589,229	$ 2,685,031
Cost and Rate Analysis	$ 3,624	$ 3,624	$ 3,758	$ 178,897	$ 4,042	$ 4,191
Emergency/disaster Management	$ 71,832	$ 71,832	$ 72,270	$ 72,724	$ 73,195	$ 73,683
Subtotal	$ 1,529,963	$ 3,265,111	$ 3,539,573	$ 4,139,130	$ 4,166,352	$ 4,277,039
Engineering and Design						
Design Criteria, Standards and Guidance	$ 47,191	$ 92,995	$ 96,436	$ 142,357	$ 147,624	$ 153,086
Design, Field and Operations Engineering	$ 667,915	$ 744,324	$ 750,219	$ 756,332	$ 762,671	$ 769,245
Maintenance and Field Engineering Support	$ 17,120	$ 17,120	$ 30,713	$ 20,810	$ 32,131	$ 28,798
Hazard Mitigation Planning	$ 23,152	$ 23,152	$ 84,247	$ 85,136	$ 25,818	$ 26,773
Dam Safety Program	$ 182,506	$ 182,506	$ 255,872	$ 247,714	$ 293,621	$ 293,376
Retrofiting Program	$ 4,530	$ 4,530	$ 83,934	$ 82,168	$ 85,208	$ 88,360
Flood Insurance Program	$ 8,623	$ 8,623	$ 55,582	$ 52,119	$ 81,173	$ 81,916
Community Rating System	$ 7,836	$ 7,836	$ 48,286	$ 50,072	$ 73,776	$ 76,506
Code Development and Zoning Support Services	$ 50,170	$ 84,245	$ 131,262	$ 136,118	$ 208,764	$ 216,488
GIS, Mapping and Database Management	$ 1,990,585	$ 737,602	$ 746,393	$ 755,509	$ 764,963	$ 774,767
Public Education/Outreach	$ 216,254	$ 205,504	$ 209,407	$ 213,456	$ 217,653	$ 222,007
Infrastructure Management Planning	$ 67,061	$ 267,061	$ 179,542	$ 132,115	$ 134,783	$ 137,550
Subtotal:	$ 3,378,369	$ 2,470,923	$ 2,768,074	$ 2,770,870	$ 2,925,964	$ 2,967,492
Operations and Maintenance						
General Maintenance Management	$ 439,234	$ 839,318	$ 921,190	$ 1,489,515	$ 1,514,407	$ 1,530,887
SW Management Facilities Maintenance	$ 987,593	$ 987,593	$ 806,131	$ 1,391,115	$ 1,109,266	$ 1,139,144
Conveyance System Maintenance	$ 1,558,341	$ 2,058,379	$ 2,199,669	$ 2,352,594	$ 2,452,485	$ 2,423,685
General Remedial Maintenance	$ 1,745,118	$ 1,961,640	$ 2,316,651	$ 3,190,852	$ 3,307,893	$ 3,388,920
Emergency Response Maintenance	$ 163,066	$ 163,066	$ 169,100	$ 175,357	$ 181,845	$ 188,573
Infrastructure Management Program	$ 1,453,374	$ 1,453,374	$ 1,500,489	$ 1,549,347	$ 1,600,013	$ 1,472,553
GASB 34	$ 234,598	$ 234,598	$ 236,618	$ 238,713	$ 240,885	$ 63,138
Field Data Collection	$ 383,972	$ 383,972	$ 515,211	$ 525,394	$ 671,356	$ 447,316
Public Drainage System Inspection and Regulation	$ 197,827	$ 197,827	$ 205,147	$ 212,737	$ 220,608	$ 228,771
Private Facilities Inspection and Regulation	$ 392,536	$ 428,944	$ 437,045	$ 566,096	$ 577,421	$ 589,166
Public Assistance and Complaint Response	$ 55,570	$ 55,570	$ 57,626	$ 59,758	$ 61,969	$ 64,262
Subtotal:	$ 7,611,229	$ 8,764,281	$ 9,364,877	$ 11,751,477	$ 11,938,149	$ 11,536,414
Plan Review and Erosion Control						
General Code Development and Review	$ 87,470	$ 239,052	$ 223,494	$ 265,451	$ 284,832	$ 255,222
Stormwater Systems Insp. - New Development	$ 58,059	$ 278,998	$ 279,212	$ 499,679	$ 577,506	$ 589,780
Regulatory Enforcement	$ 87,228	$ 87,228	$ 88,605	$ 90,034	$ 91,515	$ 93,051
General Permit Administration	$ 6,636	$ 6,636	$ 6,881	$ 7,136	$ 7,400	$ 7,674
Erosion and Sediment Control Program	$ 1,158,740	$ 1,201,417	$ 1,245,869	$ 1,291,966	$ 1,339,769	$ 1,389,341
Subtotal:	$ 1,398,133	$ 1,813,331	$ 1,844,062	$ 2,154,266	$ 2,301,023	$ 2,335,067
Construction Services						
Capital Improvements	$ 7,955,966	$ 8,871,836	$ 12,971,891	$ 10,596,751	$ 10,622,531	$ 13,149,264
Construction Project Management	$ 506,584	$ 972,425	$ 1,278,537	$ 1,490,323	$ 1,897,474	$ 1,873,128
Inspections	$ 55,093	$ 201,451	$ 255,693	$ 369,225	$ 382,886	$ 397,053
Conveyance System Rehabilitation	$ 1,885,470	$ 3,296,032	$ 5,306,986	$ 8,070,940	$ 8,092,065	$ 10,613,971
Contracted Survey Services	$ 155,600	$ 168,000	$ 369,000	$ 297,000	$ 396,000	$ 496,000
Land, Easement, and ROW Acquisition	$ 1,250,742	$ 1,060,587	$ 1,071,338	$ 1,562,488	$ 1,742,290	$ 1,760,504
Subtotal:	$ 11,809,454	$ 14,570,331	$ 21,253,445	$ 22,386,726	$ 23,133,245	$ 28,289,920
Watershed Management Planning						
Watershed Planning	$ 4,917,552	$ 3,927,297	$ 688,942	$ 756,748	$ 784,748	$ 813,784
BMP Development	$ 225,662	$ 227,911	$ 245,213	$ 264,051	$ 273,821	$ 283,952
Comprehensive Monitoring Program	$ 375,902	$ 369,542	$ 378,876	$ 388,870	$ 391,615	$ 399,378
Stream Protection and Restoration	$ 147,114	$ 143,843	$ 157,096	$ 171,673	$ 174,565	$ 181,252
BMP Programs and Activities	$ 159,509	$ 156,238	$ 169,950	$ 185,002	$ 188,387	$ 195,586
Used Oil and Toxic Materials	$ 39,741	$ 39,741	$ 41,211	$ 42,736	$ 44,317	$ 45,957
Spill Response and Clean Up	$ 29,512	$ 29,512	$ 30,604	$ 31,736	$ 32,910	$ 34,128
Program for Public Education and Reporting	$ 315,266	$ 140,266	$ 141,755	$ 143,300	$ 144,902	$ 146,564
Illicit or Cross Connections	$ 38,319	$ 38,319	$ 39,737	$ 41,207	$ 42,731	$ 44,312
Illegal Dumping	$ 78,169	$ 78,169	$ 79,211	$ 80,292	$ 81,412	$ 32,575
Multi-objective Planning and Support	$ 72,167	$ 62,627	$ 68,980	$ 76,042	$ 71,935	$ 75,052
Zoning Support	$ 32,009	$ 28,829	$ 31,241	$ 33,900	$ 32,847	$ 34,215
Landfills and Other Waste Facilities	$ 22,582	$ 22,582	$ 23,417	$ 24,284	$ 25,182	$ 26,114
Emergency Response	$ 20,385	$ 17,205	$ 19,187	$ 21,400	$ 19,884	$ 20,772
Subtotal:	$ 6,473,887	$ 5,282,079	$ 2,115,420	$ 2,261,241	$ 2,309,259	$ 2,333,641
TOTAL:	$ 32,201,034	$ 36,166,056	$ 40,885,451	$ 45,463,710	$ 46,773,991	$ 51,739,574

Table 3 - New Initiatives Only – Cost of Service

Fairfax County Stormwater Program						
Stormwater Cost of Service Analysis/Rate Model - New Initiatives Only						
Cost of Service Analysis: All Costs, Summary by Cost Subcategory by Year						
Major Cost Category	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Cost Subcategory						
General Expenses						
General Stormwater Program Administration	$ 93,618	$ 428,722	$ 422,779	$ 432,912	$ 429,125	$ 412,419
Billing Operations	$ 146,879	$ 194,439	$ 197,933	$ 212,144	$ 216,294	$ 220,597
HR Functions	$ 44,366	$ 125,034	$ 128,772	$ 120,649	$ 112,669	$ 116,838
General Program Planning and Development	$ 54,308	$ 98,332	$ 101,970	$ 116,331	$ 120,635	$ 125,099
Budget and Cost Controls	$ 13,577	$ 75,186	$ 77,968	$ 91,441	$ 94,824	$ 98,332
Contract Management	$ 87,983	$ 212,525	$ 220,389	$ 228,543	$ 236,999	$ 245,768
Interagency Cooperative Activities						
Indirect Cost Allocations	$ -	$ 679,847	$ 847,791	$ 1,148,406	$ 1,316,934	$ 1,365,661
Cost and Rate Analysis	$ -	$ 3,624	$ 3,758	$ 178,897	$ 4,042	$ 4,191
Emergency/disaster Management	$ -	$ 11,832	$ 12,270	$ 12,724	$ 13,195	$ 13,683
Subtotal	$ 440,730	$ 1,829,541	$ 2,013,630	$ 2,542,048	$ 2,544,717	$ 2,602,588
Engineering and Design						
Design Criteria, Standards and Guidance	$ -	$ 45,805	$ 47,499	$ 91,609	$ 147,624	$ 153,086
Design, Field and Operations Engineering	$ -	$ 76,408	$ 79,236	$ 82,167	$ 177,671	$ 184,245
Maintenance and Field Engineering Support	$ -	$ -	$ 12,960	$ 2,400	$ 13,040	$ 9,000
Hazard Mitigation Planning	$ -	$ -	$ 60,239	$ 62,468	$ 97,556	$ 101,165
Dam Safety Program	$ -	$ -	$ 73,199	$ 64,868	$ 110,596	$ 110,165
Retrofiting Program	$ -	$ -	$ 79,236	$ 82,168	$ 85,208	$ 88,360
Flood Insurance Program	$ -	$ -	$ 46,639	$ 42,845	$ 71,557	$ 71,944
Community Rating System	$ -	$ -	$ 40,159	$ 41,645	$ 65,037	$ 67,444
Code Development and Zoning Support Services	$ -	$ 76,408	$ 79,236	$ 82,167	$ 152,817	$ 158,471
GIS, Mapping and Database Management	$ 1,826,409	$ 567,350	$ 569,842	$ 572,427	$ 575,106	$ 577,885
Public Education/Outreach	$ 189,986	$ 179,236	$ 182,168	$ 185,208	$ 188,360	$ 191,630
Infrastructure Management Planning	$ -	$ 200,000	$ 110,000	$ 60,000	$ 60,000	$ 60,000
Subtotal:	$ 2,091,394	$ 1,240,633	$ 1,476,595	$ 1,466,937	$ 1,842,350	$ 1,872,016
Operations and Maintenance						
General Maintenance Management	$ 300,980	$ 701,064	$ 777,821	$ 1,340,841	$ 1,360,232	$ 1,371,008
SW Management Facilities Maintenance	$ 200,000	$ 200,000	$ -	$ 565,759	$ 263,975	$ 273,180
Conveyance System Maintenance	$ 30,075	$ 530,113	$ 625,459	$ 730,742	$ 781,227	$ 701,193
General Remedial Maintenance	$ 652,770	$ 869,292	$ 1,198,131	$ 2,045,191	$ 2,134,089	$ 2,185,929
Emergency Response Maintenance	$ -	$ -	$ -	$ -	$ -	$ -
Infrastructure Management Program	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ -
GASB 34	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ -
Field Data Collection	$ 240,000	$ 240,000	$ 365,913	$ 370,571	$ 510,805	$ 280,825
Public Drainage System Inspection and Regulation	$ -	$ -	$ -	$ -	$ -	$ -
Private Facilities Inspection and Regulation	$ 250,000	$ 286,408	$ 289,236	$ 412,817	$ 418,471	$ 424,335
Public Assistance and Complaint Response	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal:	$ 2,033,824	$ 3,186,877	$ 3,616,560	$ 5,825,922	$ 5,828,800	$ 5,236,470
Plan Review and Erosion Control						
General Code Development and Review	$ -	$ 151,583	$ 132,788	$ 171,389	$ 187,290	$ 154,070
Stormwater Systems Insp. - New Development	$ -	$ 220,939	$ 219,005	$ 437,244	$ 512,761	$ 522,639
Regulatory Enforcement	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
General Permit Administration	$ -	$ -	$ -	$ -	$ -	$ -
Erosion and Sediment Control Program	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal:	$ 50,000	$ 422,522	$ 401,793	$ 658,633	$ 750,051	$ 726,709
Construction Services						
Capital Improvements	$ 7,955,966	$ 8,582,476	$ 12,583,842	$ 10,194,344	$ 10,205,235	$ 12,716,529
Construction Project Management	$ 506,584	$ 876,178	$ 1,025,911	$ 1,081,187	$ 1,408,101	$ 1,365,647
Inspections	$ 55,093	$ 114,263	$ 165,280	$ 275,466	$ 285,659	$ 296,228
Conveyance System Rehabilitation	$ 1,885,470	$ 3,296,032	$ 5,306,986	$ 8,070,940	$ 8,092,065	$ 10,613,971
Contracted Survey Services	$ 155,600	$ 168,000	$ 369,000	$ 297,000	$ 396,000	$ 496,000
Land, Easement, and ROW Acquisition	$ 1,250,742	$ 993,608	$ 1,001,882	$ 1,490,461	$ 1,667,598	$ 1,683,049
Subtotal:	$ 11,809,454	$ 14,030,558	$ 20,452,900	$ 21,409,399	$ 22,054,657	$ 27,171,424
Watershed Management Planning						
Watershed Planning	$ 4,630,586	$ 3,640,331	$ 391,359	$ 448,154	$ 464,736	$ 481,931
BMP Development	$ 76,289	$ 78,538	$ 90,314	$ 103,420	$ 107,247	$ 111,215
Comprehensive Monitoring Program	$ 9,860	$ 3,500	$ 6,320	$ 9,560	$ 5,300	$ 5,800
Stream Protection and Restoration	$ 58,254	$ 54,984	$ 64,949	$ 76,117	$ 75,473	$ 78,493
BMP Programs and Activities	$ 58,254	$ 54,984	$ 64,949	$ 76,117	$ 75,473	$ 78,493
Used Oil and Toxic Materials	$ -	$ -	$ -	$ -	$ -	$ -
Spill Response and Clean Up	$ -	$ -	$ -	$ -	$ -	$ -
Program for Public Education and Reporting	$ 275,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
Illicit or Cross Connections	$ -	$ -	$ -	$ -	$ -	$ -
Illegal Dumping	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ -
Multi-objective Planning and Support	$ 14,790	$ 5,250	$ 9,480	$ 14,340	$ 7,950	$ 8,700
Zoning Support	$ 4,930	$ 1,750	$ 3,160	$ 4,780	$ 2,650	$ 2,900
Landfills and Other Waste Facilities	$ -	$ -	$ -	$ -	$ -	$ -
Emergency Response	$ 4,930	$ 1,750	$ 3,160	$ 4,780	$ 2,650	$ 2,900
Subtotal:	$ 5,182,894	$ 3,991,086	$ 783,690	$ 887,268	$ 891,478	$ 870,432
TOTAL:	$ 21,608,297	$ 24,701,217	$ 28,745,168	$ 32,790,206	$ 33,912,051	$ 38,479,639

V. Funding Options

Phase I of the Stormwater Needs Assessment Project included a detailed evaluation of funding options for the County. That information is not repeated here. The funding options analysis completed during this phase of the report addressed the implementation of a service fee for stormwater, with the creation of a stormwater enterprise fund or utility.

Several ways of structuring and calculating stormwater service fees (or "user charges") are employed by cities and counties throughout the United States. This section of the report summarizes several rate methodology options available to Fairfax County. The basic parameters employed for rate structures, plus modifying factors that can be applied to the various methodologies, are described. Other funding methods that can be blended with fees are identified.

The initially preferred rate structure and mix of funding may have to be adjusted as needs change over time. Information will flow from the capital improvement master plan in the future that may suggest that substantial capital investment is needed in the drainage systems. More remedial repairs and capital improvement needs may be identified as the Watershed Plans are implemented and existing systems continue to age. Stormwater quality management may become an even more demanding part of the program as the County's VPDES permit is renewed. It is anticipated that the Potomac Tributary Strategy recently established by the State will be the foundation for performance parameters in the County's VPDES permit to be reissued in FY 2007.

V-A. Evaluation Criteria

The consultant team's experiences implementing a variety of stormwater funding methods elsewhere suggest that the most important factors in selecting a practical approach are the local circumstances, practices, and politics. Every community is different and needs a solution that fits its specific situation. Beyond circumstances unique to Fairfax County or the Virginia statutes, the following criteria were applied during the initial evaluation of the feasibility of the utility and during implementation discussions for the utility:

- Fund the program using a methodology that links the demand for services to the amount paid by any particular property owner.
- Provide a mechanism that recognizes positive behaviors by the land owner to reduce impacts on flow and pollutant loading.
- Dedicate the funding to the objectives of the stormwater program where the monies cannot be redirected to other competing priorities.
- Utilize a funding strategy that encourages greener development.
- Make the funding mechanism an equitable strategy, bringing all properties into the funding base, not just those paying real estate and other general fund revenues.

- Apply the funding strategy uniformly across the County.
- Utilize bond debt to support the capital improvement program.

None of the service charge rate structures or secondary funding methods examined during the preparation of the final policy for the utility is "perfect" under such a broad range of criteria. The listed order of the criteria above does not imply a priority, and no single consideration should outweigh the others to the extent that a rate methodology or secondary funding method is selected or rejected for any one reason.

V-B. Methodologies for Cost Allocation

The methodologies reviewed included *imperviousness*, *imperviousness and percent imperviousness*, *imperviousness and gross parcel area*, and *gross area with modifying factors.* Each methodology is evaluated against the criteria listed above and the findings are provided following this summary.

Preliminary Recommendation for Rate Methodology: The primary methodology for allocation of costs recommended is “imperviousness” on the property with a secondary factor of the gross parcel area. Imperviousness has been evaluated and identified as the key contributor to demand for services in stormwater, whether it is for routine drainage, flood controls, public safety, or water quality. There exists a strong body of research detailing the correlation between the development of a parcel and the impacts of that development on the drainage system and the overall services to be provided by local governments throughout the nation. It is recommended that gross area be included as a secondary rate factor to address those services that must be provided regardless of the presence of imperviousness and that should be fairly borne by all properties within the County. This increases the equity of the rate methodology, not limiting it to only land that has been disturbed and by taking into account the total lot size along with the amount of imperviousness.

Modifying Factors: Many modifying factors were considered in the development of the rate structure preliminary recommendation. These includes such items as *water quality impact factor*, *service charge credits*, *watershed surcharges*, *base rate for fixed costs*, and *varying approaches to single family residential properties*. Upon completion of the evaluation for Fairfax, the modifying factors of service charge credits and a tiered single family detached-housing rate structure are recommended. Service charge credits provide an opportunity for the County to recognize contributions made by private investment in the drainage system and in water quality protection that reduce the demand for service. A tiered single family residential rate structure also increases the equity by recognizing the varying amount of imperviousness present within this relatively homogenous land use activity. The County should consider whether it wants to place a limit on the number of billing units to be charged single family detached residential, which often occurs in the initial establishment of stormwater utility rates.

Preliminary Recommendation on Rate Modifiers: Combining a primary methodology of imperviousness and gross parcel area with the modifying factors of a multi-tiered residential rate with service charge credits will provide the County will an equitable basis of cost allocation that is legally defendable, that can be understood by the general public through a targeted education program, and that will be administratively manageable. Over time the

County may choose to refine the rate structure to include additional elements of watershed surcharges, water quality impact factors, and a base rate for fixed costs. These additional factors can refine the equity of cost allocation but are not critical in the short term to effectively establish a stormwater user-fee funding strategy. These additional factors often require more detailed program cost tracking and administrative overhead to ensure fair allocation of costs occur.

V-C. Estimated Rate

Estimated Rate Based on Imperviousness ONLY: Upon completion of the program evaluation and analysis of the projected service enhancements to begin to build a proactive stormwater program, an analysis of potential rates was undertaken. The approach to estimating a rate was to use Imperviousness only as the rate methodology. This was done due to constraints on data availability. AMEC utilized the data available from the Department of Tax Administration, the data analysis utilized in the 1997 rate evaluation, and existing GIS data provided by the County. Should the Board of Supervisors choose to pursue the implementation of a user-fee as the primary funding method for the program, an update of the imperviousness planimetric data needs to be undertaken. It is estimated that an update will cost $1,750,000. Once completed, the County should adopt an annual process to ensure that the data is current.

Basic assumptions regarding fund balance, level of other incomes such as the use of Pro Rata Share and fees for regulatory inspections, debt service and credit initiatives were made based on input from County staff. If the Board moves forward with this effort, these key policies will be finalized in a policy statement and factored into a final rate analysis.

VI. Rate Analysis

Rate analysis is accomplished by translating the cost of service into a cash flow demand, taking into consideration other revenues that may be utilized to address the program and increased demand for cash to address bad debt, cash reserves, bond sales expenses, offsets and credits. In addition, the unit for billing the service fee has to be established so a “fee due” can be calculated for each property. To define a fee for the recommended program of services over the six year planning period, the consultant utilized the data analysis completed in 1997, making the assumption that the “average” imperviousness by land use category (i.e., commercial, industrial, single family residential, town homes, apartments, condos) is consistent over time. The current real estate database provides the information necessary for determining the number of parcels per land use (in 2004).

The average imperviousness for single family residential property utilized in the analysis is **3,398 square feet**. This is used as the rate unit for analysis of billing units for all other property land use categories. The total number of billing units estimated is 442,669 and is distributed as follows:

Land Use	Number of Billing Units	Percent of Total Units
Single Family Residential	172,339	39%
Multifamily Housing		
Apartments	12,175	3%
Townhomes	43,038	10%
Condos	9,812	2.5%
Mobile Homes	1,569	0.5%
Commercial	156,132	34%
Industrial	6,691	2%
Institutional	40,913	9.5%
Total Billing Units	**442,669**	

Properties owned by all governments have been excluded from this calculation, including properties owned by the Fairfax County School Board and the Fairfax County Park Authority, based on the enabling legislation for user-fee development. This is a conservative estimate for use in the rate analysis and results in an under-estimate of the total billing units because the necessary data for an exact analysis from current conditions is not available.

Financial Factors Utilized in the Cash Flow Analysis:

- Interest earnings – 2 percent of annual cash flow
- Bad debt – 1 percent of annual cash generated by the fee
- Pro Rata appropriated funds – set at $5,400,000 annually
- Operating reserves – 10 percent of operational expense only
- Inflation rate on operating costs – 3 percent annually
- Credits – 2 percent of cash generated annually
- Growth rate for billing units – 2 percent annually

Cash Flow Analysis

Table 4 summarizes the cash flow analysis using the financial factors outlined above and based on the following assumptions:

- The rate will remain constant for two fiscal years, with adjustments in rates in FY 2009 and FY 2011.
- An update of the rate model will occur in FY 2010 to validate the program assumptions and to project the cash demands for the next five year period.

Fiscal Year	Rate per Billing Unit	
	Monthly	Annually
2007	6.46	77.52
2008	6.46	77.52
2009	7.40	88.80
2010	7.40	88.80
2011	7.95	95.40

Table 4 - Cash Flow Analysis

Stormwater Cost of Service Analysis/Rate Model Revenue/Expenditure (Cash Flow) Analysis					
	Year 1	Year 2	Year 3	Year 4	Year 5
Expenses					
Annual Operating Expense	$ 21,002,285	$ 23,138,099	$ 27,190,839	$ 28,504,712	$ 28,448,907
Annual Capital Expense and Bonded Capital Expense	$ 15,470,000	$ 18,070,000	$ 18,650,000	$ 18,650,000	$ 23,650,000
Subtotal: with Inflation	$ 36,472,285	$ 41,971,656	$ 46,738,137	$ 48,095,368	$ 53,037,721
Bond Sale Costs and Debt Service	$ -	$ -	$ -		
Bond Debt Service Coverage	$ -	$ -	$ -	$ -	$ -
Operating Fund Balance and Emergency Reserve- Unappropriated	$ 2,100,228	$ 618,855	$ 131,387	$ (5,581)	$ 93,881
Total: Expenses	$ 38,572,513	$ 42,590,512	$ 46,869,524	$ 48,089,787	$ 53,131,602
Other Revenues					
Funds Carried Forward	$ -	$ 1,492,967	$ 44,370	$ 618,161	$ 845,450
Bond Sales Receipts and Assocated Funds	$ -	$ -	$ -	$ -	$ -
Other Fees and Charges (Pro Rata)	$ 5,400,000	$ 5,400,000	$ 5,400,000	$ 5,400,000	$ 5,400,000
Interest Income	$ 420,046	$ 462,762	$ 543,817	$ 570,094	$ 568,978
Recovered Delinquencies		$ 332,542	$ 388,550	$ 396,321	$ 434,292
Other Resources (Fees for E&S)	$ 956,874	$ 992,278	$ 1,028,993	$ 1,067,065	$ 1,106,547
Total: Other Revenues	$ 6,776,920	$ 8,680,550	$ 7,405,730	$ 8,051,642	$ 8,355,267
Service Fee Revenue Requirement	$ 31,795,594	$ 33,909,962	$ 39,463,795	$ 40,038,146	$ 44,776,335
Revenue Stream Reduction Allowances					
Delinquencies and Bad Debt	$ 343,181	$ 350,045	409,000	417,180	457,150
Offsets					
Credits	686,362	700,089	409,000	417,180	457,150
Total: Revenue Reduction Allowances	$ 1,029,543	$ 1,050,134	$ 817,999	$ 834,359	$ 914,300
Adjusted Service Fee Revenue Requirement	$ 32,825,137	$ 34,960,096	$ 40,281,794	$ 40,872,505	$ 45,690,635
Estimate of Service Fee Needed/Year					
Annualized ERU Revenue Requirement	$ 32,825,137	$ 34,960,096	$ 40,281,794	$ 40,872,505	$ 45,690,635
Number of ERU	442,700	451,554	460,585	469,797	479,193
Estimated Monthly Charge per ERU	$ 6.18	$ 6.45	$ 7.29	$ 7.25	$ 7.95
Service Fee Recommendation					
Recommended Monthly Charge per ERU	$ 6.46	$ 6.46	$ 7.40	$ 7.40	$ 7.95
Estimated Annual ERU Revenue	$ 34,318,104	$ 35,004,466	$ 40,899,955	$ 41,717,954	$ 45,714,985
Estimated Year-end Revenue Surplus (Deficit)	$ 1,492,967	$ 44,370	$ 618,161	$ 845,450	$ 24,351
Available Funds for Appropriation in Following Year	6.5%	0.2%	2.2%	3.0%	0.1%

VII. Impacts of Service Fees on Various Properties in the County

After completion of the preliminary rate analysis, the Consultant Team evaluated the impact of the use of service fees on various properties in the County. The use of service fees, based on demand as measured by the presence of imperviousness on each property, shifts the burden to those who place the *greatest demand for County services*. Several properties were evaluated to demonstrate the shift from a "value" basis for

supporting stormwater (property tax) to a fee basis (imperviousness). The data below assumes the following:

- A tax rate of $1.03
- The value of the property for tax evaluation is based on the Department of Tax Administration's data, provided in March 2005.
- The number of billing units for the fee estimate is based on evaluation of imperviousness taken from current County aerial photography and digitally measured for each property studied.
    - The billing unit is 3,398 square feet of imperviousness.
    - The annual fee is $77.52 per ERU.
- The estimated tax bill is calculated using a formula of "assessment divided by 100, multiplied by $1.03."
- The portion of the tax bill for stormwater is based on the formula:
    - estimated tax bill divided by 103 to establish what the value of one cent is for their bill;
    - take the value of one cent raised and multiply by the number of cents necessary to fund the stormwater program (total budget divided by $17.9 million – the amount one cent is projected to raise in FY 2006, county-wide).

Table 5 – Comparison of Property Tax to Fee Revenues

Property	Est. 2005 Tax Bill Based on $1.03 Rate	Portion of Potential Tax for SW	Est. Fee $77.52 Annually Per ERU
Fair Oaks Mall	**$3,144,778**	**$ 58,847**	**$ 81,241**
Tysons Park Inc	**$ 595,140**	**$ 11,136**	**$ 5,891**
Capital One Bank Bldg.	**$1,529,204**	**$ 28,615**	**$ 15,890**
Lord of Life Lutheran Church	**none**	**none**	**$ 1,402**

The data samples represent three commercial buildings and a church. Two of the three commercial buildings are multi-storied and have a significant tax valuation. The third commercial property is a shopping center (Fair Oaks Mall) whose characteristics include large open parking areas, on flat-lots, and a linear building foot-print. The Church was included to demonstrate that properties currently not paying into the property tax pool of resources would be included in a fee-based revenue source. The shift in burden is representative of the funding principle ***that the amount any property pays for stormwater services should be driven by demand or need for service rather than***

by value of the property. This principle was defined by the Stormwater Advisory Committee as one important factor in determining how to fund the stormwater program.

The Washington Post provided a comparison of single family home property valuations for Fairfax County. The data was used to evaluate the shift in revenue generation from a real estate tax to a fee. The same approach was used to determine the amount of the tax bill dedicated to stormwater. The estimated fee utilizes a fixed fee for single family residential properties. This is a key policy decision that would need to be made, if the Board of Supervisors acts to create a utility. Data on imperviousness for each parcel is not currently available.

Table 6 – Comparison of Property Tax to Fees for Residential Property

Area	Average Valuation	2005 SW Portion of Tax Bill	Estimated Fee
Annandale	$383,488	73.91	77.52
Burke	$373,686	72.03	77.52
Chantilly	$425,192	81.95	77.52
Clifton	$579,342	111.65	77.52
Fairfax Station	$639,809	123.31	77.52
Great Falls	$770,709	148.54	77.52
Lorton	$294,696	56.80	77.52
McLean	$755,539	145.63	77.52
Oakton	$605,294	116.66	77.52
Reston	$362,440	69.87	77.52
Springfield	$362,725	69.93	77.52

In both commercial and residential properties, the examples show the impact on each property owner of the decision to use property value versus demand (as measured by imperviousness). Equity and fairness can be more easily demonstrated through the use of fees than property tax.

VIII. Recommendations of the Consultant Team:

It is recommended that the stormwater management program as defined through this assessment be enhanced over the next decade to take positive steps for implementation of water quality and water quantity protection measures that will contribute to a sustainable quality of life for all of Fairfax County.

It is the recommendation of the Consultant Team that the County establish a stormwater enterprise fund for FY 2006 and that during the first year of operation the resources of the fund be support by the General Fund. During FY 2006, the stormwater utility fee will be fully analyzed and a schedule of rates be established by the Board of Supervisors during their budget adoption for FY 2007. It is further recommended that the General Fund be relieved of the burden to support the stormwater program in FY 2007, with a property tax reduction as appropriate.

This recommendation is supported by the guiding principles identified by the Stormwater Advisory Committee. The shift from General Fund support to an enterprise fund will meet the long-term needs for a stable, equitable, adequate and fair approach to resource generation for the program. In addition, it is recommended that the program of Pro Rata Shares be eliminated and a new program of in-lieu-of-construction fees be established to provide for developer contributions to regional facilities when the site under development is better served through a regional solution rather than through on-site controls.

It is recommended that a program of credits be established as well as a process for appeal and fee-adjustment, both of which need to be created during the FY 2006 year of implementation. Credits are an important component of an effective user-fee system, recognizing the contributions of the private property owners in the overall performance of the drainage system. Credits should be considered for both water quality and water quantity protection. Consideration should be given for credits that address non-structural as well as structural Best Management Practices that support the overall goals of the stormwater program.